

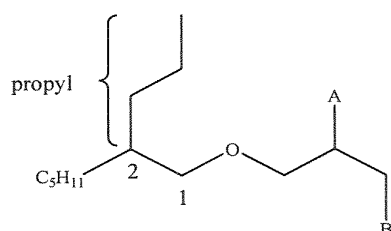
REQUEST FOR RECONSIDERATION

Claims 1-32 remain active in this application with claims 1-2, 3 and 23 being under active consideration.

The claimed invention is directed to the reaction product of 2-propylheptanol with 2,3-epoxypropanes.

Surfactant compositions, based in-part on their micelle forming ability, have found tremendous use in cleaning compositions. Cosurfactants, which by themselves have insufficient micelle and/or interfacial film forming ability, are nonetheless useful in conjunction with surfactants at forming emulsions allowing for the reduction of surfactant concentration. Known cosurfactants have had associated therewith some drawbacks such that new cosurfactants are sought.

The claimed invention addresses this problem by providing the reaction product of 2-propylheptanol with 2,3-epoxypropanes. Applicants have discovered that such reaction products are useful **cosurfactants** which may be prepared cost-effectively, and are environmentally compatible. The claimed compounds are characterized by a propyl substitution at the 2-position of a heptanol radical.

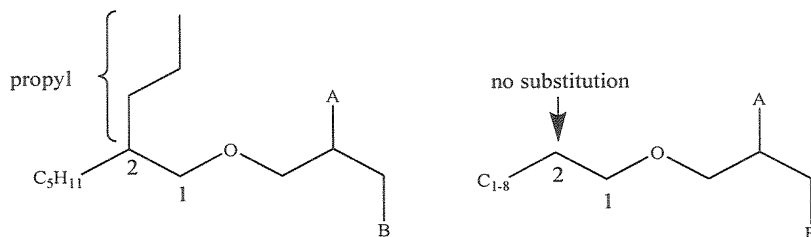


The rejection of claims 1, 2, 3 and 23 under 35 U.S.C. §103(a) over Horibe et al., JP2001/300,286 and Okutsu et al., JP2001/114,719 alone in view of Rubinfield et al., U.S. Patent 3,320,174, Durbut et al., WO97/04059 (Durbut I), Durbut et al., WO98/00418 (Durbut II) and Potterhoff-Karl et al., U.S. 5,994,290 is respectfully traversed.

None of the cited references of record disclose or suggest the claimed compounds bearing a 2-propylheptanol residue.

The combined disclosures of Horibe et al. and Okutsu et al. can be summarized as describing g 4-substituted 1,2-dioxolan-2-one compounds in which the methyleneoxy group at the 4-position is substituted with a **linear** C₃₋₁₀ alkyl group. The compounds are described as **surfactants and emulsifiers** for emulsion polymerization (Horibe). There is no disclosure or suggestion of a propyl substituent at the 2-position of a heptanol residue.

In contrast, the claimed invention is directed to the reaction product of 2-propylheptanol with 2,3-epoxypropanes such that the compounds bears a 2-propylheptanol residue.



Applicants respectfully submit that the claimed 2-propyl substitution of the heptanol residue is neither disclosed nor rendered obvious by the cited references.

The Examiner has categorized the difference between the claimed compounds and those of the primary references as differing in the length of carbon atoms. However, applicants note that the claimed compounds differ from that of the **linear substituted** compounds of the cited references in being a **branched hydrocarbon** chain (e.g., 2-propylheptol) and accordingly cannot be considered to be merely adjacent homologs. The examiner's fundamental analysis as to the structural differences between the claimed compounds and those of the cited references is in error and accordingly the rejection must be withdrawn.

Further, as to the applied reference of Okutsu et al., the alkyl group of the alkyl ether contains only 8 carbon atoms and accordingly could not suggest the claimed 10 carbon group.

Furthermore, the claimed compound and those of the cited primary references differ in activity in that the references describe compounds with **surfactant activity** capable of forming micells, while the claimed compounds have demonstrated **cosurfactant activity**.

The examiner's attention is directed to the evidence presented on pages 35-40 of the application. Example 6(a) in which an alkylglycidol carbonate according to the claimed invention is used as a **cosurfactant** in a hand dishwashing detergent. A mixture of alkyl benzene sulfonate, C_{13/15} alcohol epoxylate having 7 epoxylation units and 2-propylheptalglycidol carbonate were admixed with varying amounts of C_{12/14}-alcohol ethoxylate bearing 3 ethylene oxide units (Lutensol[®] A3N). The mixture was analyzed with respect to viscosity and compared with formulations in which the claimed 2-propylheptolglycidol carbonate is replaced with Mazox[®] LDA (lauryl amine oxide) or water. Alkyl amine oxides are described by *Smith* as useful cosurfactants (page 3 of applicants' specification). The data is reproduced below:

0	1	2	3	6	8	% Lutensol [®] A3N
3,040	3,440	8,200	12,300	18,000	52,000	2-propylheptyglycidol carbonate (alkylglycidol carbonate of the formula Ic)
1,210	905	970	1,820	2,890	7,010	Water
2,040	2,500	2,910	5,760	12,700	19,200	Mazox [®] LDA oxides w.s.

As seen in the summarized data on page 38, the claimed compound demonstrated a **greater cosurfactant activity** than Mazox[®] LDA at similar concentrations. This may be viewed by comparing the concentration of Lutensol[®] A3N noting that the claimed compound achieved a viscosity of 12,300 with only 4% Lutensol[®] while Mazox[®] LDA required 6% Lutensol[®] in order to achieve a similar viscosity. A similar dichotomy of effectiveness between the claimed compounds and Mazox[®] LDA is seen between the formulations at 6 and

8% Lutensol[®]. Thus, it is clear that the claimed compound has a greater cosurfactant affect that Mazox[®] LDA, a laurylamine oxide. This data provides evidence of a level of cosurfactant activity which is not suggested by the cited references.

Further evidence of the improved cosurfactant activity is found in the hand dishwashing detergent test appearing on pages 38-39 of the specification. This test measured the foam stabilization of the claimed compound as compared with the known cosurfactant alkyl amide oxide Mazox[®] LDA. The test added olive oil to foamed solutions until the foam disappeared.

additive	Consumption of olive oil
propylheptyglycidol carbonate (alkylglycidol carbonate of the formula Ic)	46 mL
Mazox [®] LDA	28 mL
Water	27 mL

The data indicates that the surfactant composition containing the claimed compound consumed significantly greater amounts of olive oil than the lauryl amine oxide cosurfactant (Mazox[®] LDA) containing composition. Accordingly, the greater cosurfactant activity of the claimed compounds have been demonstrated.

None of the secondary references disclose or suggest the claimed structure and are merely cited to describe detergent mixtures. However, since none of the secondary references disclose or suggest the specific 2-propyl substitution of a heptanol, the claimed invention is clearly not rendered obvious by the combination of references and accordingly withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

Applicants note the examiner's denial of applicants' request for priority under 35 U.S.C. §119. The examiner is reminded that

the only times during *ex parte* prosecution that the examiner considers the merits of an applicant's claim of priority is when a reference is found with an effective date between the date of the foreign filing and the date of filing in the United States and when an interference situation is under consideration. (M.P.E.P. §201.15).

As **no intervening reference** has been cited and the examiner has **not indicated that an interference situation is being considered**, the examiner's denial of applicants' request for priority is **improper** and must be withdrawn. Applicants repeat their request for the full benefit of priority to their priority application DE 102 46 140.6 filed on October 10, 2002.

Applicants submit this application is now in condition for allowance and early notification of such action is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Richard L. Chinn, Ph.D.
Attorney of Record
Registration No. 34,305

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)